

**REMARKS**

Claims 1-4 and 6-15 are pending. Claims 1-4 and 6-15 are rejected. Claim 5 has been canceled. Claim 1 is amended.

**Claim Objections**

The office action states that claims 1-4 and 6-15 are objected to because of the following informalities:

- (1) Claim 1, lines 3 and 4, "the diameter" lacks an antecedent basis;
- (2) Claim 1, line 4, "the protective jacket at least" should be changed --the protective jacket of at least --;
- (3) Claim 1, lines 5, 7 and 13, "the optical fibers" lacks an antecedent basis;
- (4) Claim 1, lines 8 and 9, "the fibers" lacks an antecedent basis;
- (5) Claim 1 is confusing, "each cable... comprising at least one optical fiber... ..a transition zone in which the fibers are non-parallel". If the Examiner interprets that each cable comprising one optical fiber, how the only one fiber that can parallel or non parallel by itself?

Applicants submit:

With regard to objection (1), Applicants traverse the objection. According to MPEP § 2173.05(e) the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. It cites as an example that the limitation "the outer surface of said sphere" would not require a recitation that the sphere has an outer surface. Applicants submit that the same reasoning applies the the limitation in claim 1 of "the diameter of the fiber optic cable" and "the diameter of the optical fiber."

With regard to objection (2), Applicants have made the requested correction.

With regard to objections (3)-(5), Applicants traverse the objections. Claim 1 states that the interconnect devise comprises a plurality of fiber optic cables, each of which comprises at least one optical fiber. Because each of the plurality of fiber optic cables has at least one optical fiber, there are a plurality of optical fibers. However, Applicants now recognize that claims 1, 4,

11, and 13 subsequently refer to a single optical cable instead of plural optical cables. Applicants have amended claims 1, 4, 11, and 13 to correct this discrepancy.

### **§ 103 Rejections**

Claims 1-4 and 6-15, insofar as that can be understood, are rejected under 35 USC § 103(a) as being unpatentable over Bunin et al. (5,923,803) in view of Kingstone et al. (5,838,860).

The Office Action states in part:

Bunin et al., figure 4, disclose an optical interconnect device comprising:

- a fiber optic cable (20) having two ends and comprising a plurality of optical fibers (22) each surrounded by a protective jacket where a diameter of the fiber optic cable is larger than a diameter of the each optical fiber and where the protective jacket of at least a first end of the each fiber optic cable has been removed thereby exposing the optical fiber;
- a ribbonized assembly (31) encasing a portion of the first end of the fiber optic cable and the optical fibers, wherein the fiber optic cable occupies an input zone, the fiber occupies an output zone where the each optical fiber in the output zone lie parallel to one another and has a first pitch; and
- a ferrule (50) attached to the ribbonized assembly, the ferrule having a plurality of internal grooves (54) having a second pitch; wherein the first pitch of the optical fiber is substantially equal to the second pitch of the ferrule.

Bunin et al. disclose the instant claimed invention as described above except for the cable and the fiber both occupy a transition zone in which the fibers are non-parallel and a plurality of fiber optic cables.

Kingstone et al., figure 7, disclose a fiber optic light source having a fiber optic cable (100) with a plurality of optical fibers (98) which having the cable and the fiber both occupy a transition zone in which the fibers are non-parallel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Bunin et al. to have the cable, as taught by Kingstone et al., in order to provide uniform sideways lighting over the length of the cable, (Kingstone et al., column 1, lines 33-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate Bunin et al.'s cable to have a plurality of fiber optic cables, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179, in order to reduce cost and easy assembly.

Regarding claim 2, the optical fibers in the ribbonized assembly are nearly touching one another.

Regarding claim 3, the ribbonized assembly is of a geometry that will not violate the minimum bend radius of the optical fiber.

Regarding claim 4, the fiber optic cable is a tight buffer fiber cable.

Regarding claims 6 and 7, the ribbonized assembly comprising an ultraviolet light curable resin and non-active fibers disposed adjacent to the optical fibers.

Regarding claims 8-10, the non-active fibers are of the same construction as the optical fibers, the optical fibers are disposed between the non-active fibers.

Regarding claim 11, the protective jacket on both ends of the fiber optic cable has been removed to expose the optical fibers.

Regarding claim 12, the ferrule is terminated to a MT connector.

Regarding claims 13 and 14, the second end of the fiber optic cable is terminated to an optical device, the optical device is a simplex v-groove.

Regarding claim 15, the ribbonized assembly is straight.

Applicants respectfully submit that according to MPEP 2142, to establish a case of *prima facie* obviousness, three basic criteria must be met: 1) there must be some suggestion or motivation, either in the references or generally known to one skilled in the art, to modify or combine reference teachings, 2) there must be reasonable expectation of success, and 3) prior art references must teach or suggest all the claim limitations. The ability to modify the method of the references is not sufficient. The reference(s) must provide a motivation or reason for making the changes. *Ex parte Chicago Rawhide Manufacturing Co.*, 226 USPQ 438 (PTO Bd. App. 1984).

Applicants respectfully submit that the references cannot support a case of *prima facie* obviousness as to the claims because, among other possible reasons, the cited references do not provide a motivation or suggest for inserting a transition zone in the device of Bunin because Kingstone does not disclose a transition zone as described in the present claims (*see* following explanation). Even if it did, contrary to the statements in the office action, there would be no motivation to provide the connector device of Bunin with uniform sideways lighting over the length of the cable as taught by Kingstone because the Kingstone invention relates to a fiber optic lateral illumination system (*see* Kingstone Abstract) while the invention in Bunin relates to transmitting signals along an optical fiber (*see* Bunin at col. 1, lines 11-13). In addition, these references do not disclose all the elements of the present invention because they do not disclose the cable and fibers both occupy a transition zone in which the fibers are non-parallel. Although the Office Action does not identify the portion of the ferrule in Fig. 7 of Kingstone that is “the transition zone,” Applicants believe it to be tapered front portion 120 of central bore 118 of section 103. However, Fig. 7 clearly shows that fiber optic cable 100 terminates at the outer edge of section 103, and only fibers 98 extend into section 103. Accordingly, the fiber optic cable of Kingstone does not occupy an input zone, which precludes the possibility of the cable and fibers occupying a transition zone.

With regard to claims 2-4 and 6-15, Applicants were not able to find support in Bunin for the statements presented in the Office Action, particularly with regard to claims 2, 3, 4, 6 and 7, 8-10, 11, 12, and 13. Applicants request that support be provided for the rejections of claims 2-4 and 6-15.

For these reasons, Applicant(s) submit that the cited references will not support a 103(a) rejection of the claims invention and request that the rejection be withdrawn.

In addition to the foregoing arguments, Applicant(s) submit that a dependent claim should be considered allowable when its parent claim is allowed. *In re McCairn*, 1012 USPQ 411 (CCPA 1954). Accordingly, provided the independent claims are allowed, all claims depending therefrom should also be allowed.

Based on the foregoing, it is submitted that the application is in condition for allowance. Withdrawal of the rejections under 35 U.S.C. 103 is requested. Examination and reconsideration of the claims are requested. Allowance of the claims at an early date is solicited.

The Examiner is invited to contact Applicant(s)' attorney if the Examiner believes any remaining questions or issues could be resolved.

Respectfully submitted,

May 27, 2005  
Date

By: Melanie Gover  
Melanie G. Gover, Reg. No.: 41,793  
Telephone No.: (512) 984-4308

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
Facsimile No.: 651-736-3833

**Amendments to the Drawings:**

Figure 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121 (d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121 (d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The attached sheet of drawings includes changes to Fig. 9.